WASHINGTON STATE DEPARTMENT OF ECOLOGY
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTEWATER DISCHARGE PERMIT
BOISE CASCADE CORPORATION
WALLULA, WASHINGTON

FACT SHEET
PERMIT No. WA 000369-7

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW which defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Boise Cascade Wallula
Facility Address	P.O. Box 500, Wallula, Washington 99363
Type of Facility:	Bleached Pulp and Paper
Discharge Location	Columbia River, River Mile 316 Outfall 001 Latitude: 46° 06' 00" N Longitude: 118° 55' 00" W.
Water Body ID Number	Segment No. 26 WRIA 99 WA-CR-1025

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

LOCATION

The mill is located on the east shore of the Columbia River (Lake Wallula) about 15 miles southeast of Pasco, Washington on Highway 12.

INDUSTRIAL PROCESS

The mill produces bleached kraft fine paper, bleached market pulp, and unbleached neutral sulfite semi-chemical (NSSC) corrugated media. On site Ponderosa Fibres of Washington produces high quality de-ink market pulp. The nominal production rates for the above pulp and paper facilities are presented in the following table.

Production Rate Table (Machine Air Dry Tons/ Day)

Bleached Kraft Market Pulp	392
NSSC Corrugated Medium	366
Bleached Kraft Fine Paper	681
De-ink Market Pulp	212
Total Production	1,651
Alternative Total Production*	1,439

* Alternative Total Production is production rate if the de-inking facility was discontinued.

RECEIVING WATER

Columbia River (Lake Wallula)
Class A water quality.
River Mile 316
Outfall 001
Latitude: 46° 06' 00" N Longitude: 118° 55' 00" W.
Segment No. 26 WRIA 99 WA-CR-1025

DISCHARGE OUTFALL

The mill wastewater receives primary clarification treatment followed by a secondary treatment in a two-cell aerated stabilization basin before its discharged to the Columbia River. The mill discharges its effluent through Outfall 001, which extends 9,000 feet from shoreline into Lake Wallula near river mile 316. The outfall is equipped with a 512-foot-long diffuser section with 48 equally spaced 4-inch-diameter ports. The diffuser is submerged to a depth of about 55 feet.

STORM WATER TREATMENT

The Permittee collects, treats, and discharges stormwater as part of the process discharge and has met all of required planning and monitoring requirements. Stormwater at the Ponderosa Fibres property is collected in evaporation ponds at that site and not discharged to the Boise Cascade treatment system. Stormwater discharge limitations are consistent with and incorporated in the process effluent discharge limitations.

PERMIT STATUS

The previous renewed permit for this facility was initially issued on May 10, 1991.
The permit was amended on August 7, 1995 to incorporate the new de-ink operation into the existing permit. The effluent limits presently in effect are:

OUTFALL 001	AMENDED EFFLUENT LIMITATIONS			
	Monthly	Daily	Monitoring Requirements	
Parameter	Average	Maximum	Frequency	Sample
Biochemical Oxygen Demand (5-day), lbs/day	15,290	29,051	7/week	24 hour composite
Total Suspended Solids, lbs/day	31,646	61,266	7/week	24 hour composite
Dioxin (2,3,7,8-TCDD) –		10 ppq	quarterly	24 hour composite
AOX	–	–	weekly	24 hour composite
pH	5.1 to 9.0		Continuous	Recording
Flow, MGD	-	-	Continuous	Recording
Temperature, ^{o}F	-	-	Continuous	Recording
Production, ADT/D	-	-	Daily	

An application for permit renewal was submitted to the Department on November 9, 1995 and accepted by the Department on August 1, 1996.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS MODIFIED PERMIT

The last compliance water inspection with sampling was conducted on June 2000. The Permittee was found to be in compliance with its permit limits.

Since the modification of the wastewater treatment plant in August 1995 (to include the de-inking facility), the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

WASTEWATER CHARACTERIZATION

During the past permit cycle, the wastewater discharge was characterized by the following regulated parameters:

Table 1: Wastewater Characterization

Parameter	Biennial Average	High/Low Range	Concentration*
Flow – MGD**	30.2	35.2/25.5	--
pH	--	8.0/6.5	--
BOD - lbs/day	7672.5	10428.0/5959	41.7/23.6
TSS - lbs/day	12366.5	8490.0/21833	33.7/86.7
Fecal Coliform	--	--	3 colonies/100 mL
Antimony	--	--	0.02
Chromium	--	--	0.02
Copper, Total	--	--	0.02
Nickel, Total	--	--	0.009
Zinc, Total	--	--	0.09
Phenol, Total	--	--	Less than 0.1

* milligrams per liter [mg/L]
** flow includes non-contact cooling water

STATE ENVIRONMENTAL POLICY ACT (SEPA)

There are no SEPA requirements for this permit.

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all

pollutants that may be reported on the application as present in the effluent. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. Permittee may be in violation of the permit if the constituent is exceeded as defined in 40 CFR 122.42(a) until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

The design criteria for the treatment facility are sufficient to provide secondary treatment to all wastewater. The wastewater-aerated lagoon may be dredged with Ecology's approval when the basin needs dredging.

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from 1995 Ponderosa De-ink Plant Impact engineering report prepared by CH2M Hill and are as follows:

Table 2: Design Standards for Peak Monthly Wasteload with Adequate Safety Factors

Boise Cascade Corporation, Wallula Mill

Parameter	Design Quantity
Monthly average flow (max. month)*	21.06 MGD
BOD_5 influent loading	75,589 lbs/day
TSS influent loading	19,156 lbs/day

* excluding non-contact cooling water

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based limitations are set by regulations or developed on a case by case basis. The federal effluent guidelines for best practicable control technology (BPT) and best conventional pollutant control technology (BCT) are equivalent as defined in Part 430 Subpart B and C for the bleached Kraft market pulp and NSSC cross recovery pulp production, which were issued on April 15, 1998. The federal effluent guidelines for new source performance standards for bleached market de-ink pulp is defined in Part 430 Subpart I and was issued as a final rule on April 15, 1998. It is Ecology policy to determine if the federal effluent guidelines are equivalent to all known and reasonable treatment (AKART) for these categories of paper making, which is discussed herein. Also, the 1998 effluent guidelines took both emissions to air and water into consideration and included chlorinated organic compounds.

In the most recent enhanced inspection conducted by Ecology (Golding, 1997) in January 1997, the removal efficiencies across the primary clarifier were 10% for BOD and 83% for TSS. Removal efficiency for BOD across the aerated stabilization basin (ASB) was 90%. The class II

enhanced inspection noted that the seven priority pollutant metals were found in the final effluent; i.e. arsenic, cadmium, chromium, copper, lead, mercury, and zinc., None of these constituents were found in concentrations exceeding chronic or acute state fresh water criteria at the dilution zone boundaries. No pesticides were found in the primary influent, primary effluent, ASB influent, or ASB effluent samples. PCB-1260 (Aroclor-1260) was found at an estimated concentration of 0.09 µg/L in the primary influent. However, PCB-1260 (Aroclor-1260) was not detected in the primary effluent or final effluent. Chronic fresh water quality criterion for PCB-1260 (Aroclor-1260) is 0.014 µg/L. With a chronic dilution ratio of 306:1, effluent PCB-1260 (Aroclor-1260) would be well below the chronic water quality criterion in the receiving water.

It has been determined that any further treatment beyond secondary treatment would only add a few percentage points to the removal efficiencies for BOD and TSS since the best wastewater treatment system removes about 95 percent of the influent BOD and TSS. The aerated lagoon system is very stable with respect to treatment efficiency and accommodating shock BOD loadings.

The test procedure for BOD and TSS has a great deal of variability in its results when compared across different laboratories as well as different technicians performing the tests. In developing the effluent guidelines, EPA took this variability into consideration for the daily maximum allowance and the 30 days average allowance for BOD and TSS.

Therefore, taking into account these variables, it is concluded that the aerated lagoon system design is determined to be equivalent to all known available and reasonable methods of treatment (AKART) for conventional pollutants.

The amended NPDES permit in August 1995 and NPDES permit renewal application submitted to the Department in November 1999 for this source defined the base line production to be 392 air dry tons per day (ADTPD) kraft bleached market pulp, 366 ADTPD NSSC corrugated medium, 681 ADTPD bleached Kraft fine paper, and 212 bleached market de-ink pulp. Therefore, the BPT and BCT limits for conventional pollutants will be calculated for production of 392 ADTPD for bleached Kraft market pulp using 40 CFR 430.22 of Subpart B. The BPT and BCT limits for conventional pollutants will be calculated for production of 366 ADTPD for NSSC corrugated medium using 40 CFR 430.32 of Subpart C.

The New Source Performance Standards (NSPS's) was promulgated in 1988 for the bleached Kraft facilities where market pulp, paperboard, coarse paper, tissue paper, fine paper are produced, 40 CFR 430.25. It states that the prescribed standards apply to each new source that commenced discharge after June 15, 1988 and before June 15, 1998. The Wallula Paper Machine No.3 was constructed in 1980 to manufacture the bleached Kraft fine paper. Thus, the NSPS requirement is not applicable to this equipment. However, in 1985 during the new permit cycle, the Department used its best professional judgment to require that BOD be subject to the NSPS requirements. As the result, the limits for the production of 681 ADTPD bleached Kraft fine paper are calculated using New Source Performance Standards (NSPS) in 40 CFR 430 Subpart B for the bleached Kraft fine paper BOD. The TSS limitations were derived using Best Professional Judgement (BPJ) established by the Department for bleached Kraft fine paper. The BPJ basis for the limitations were established after an engineering study and technical analysis determined the treatment system's potential maximum treatment capabilities. After a review of

the study, and based on best professional judgment of the data, the Department established the indicated limitations. The data clearly showed that the NSPS's were too restrictive to be met, mainly because of the wide climatological variations between the summer and winter months at their location. The resulting BPJ limits are more restrictive than the BPT. During 1986 and 1987, Boise Cascade conducted a second engineering study on their modified treatment system achieve the limitations. Based on a review of the subsequent engineering analysis, the Department decided that the limitations were stayed.

The limits for the production of 212 ADTPD de-ink market pulp are calculated using New Source Performance Standards (NSPS) in 40 CFR 430.95 Subpart I for BOD and TSS. The allowance for conventional pollutants are calculated for the tiered production using the above appropriate categories.

Discharge limits in this permit for the conventional pollutants will be based on the production rates shown in the following tables. The base production rates have been established by the Permittee as a result of demonstrated operating performance at those levels of production. Potential increased production rates are due to already permitted future improvements in the utilization of existing production equipment, which are identified by the Permittee as Tier I, Tier II, and Tier III. The future permitted process improvements and corresponding production increases under Tiers I, II, and III consists of fully utilizing the permitted capacity of the de-ink facility and modifying the number 3 recovery furnace air distribution system. The corresponding discharge limits for Tiers I, II, and III for these improvements will become effective when the total off machine production for three consecutive months at the respective Tier has been documented by the Permittee and acknowledged by the Department.

PRODUCTION RATE TABLE (Machine Air Dry Tons/Day)

	Base Rate[1]	Tier I[2]	Tier II[2]	Tier III[2]
Bleached Kraft Market Pulp	392	422	452	482
NSSC Corrugated Medium	366	366	366	366
Bleached Kraft Fine Paper	681	681	681	681
De-ink Market Pulp	212	212	258	312
Total Production	1,651	1,681	1,757	1,841
Alternative Total Production[3]	1,439	1,469	1,499	1,529

Note:

[1] Base case was determined by the highest continuous production rate reported during the last permit cycle.
[2] Tier I, Tier II and Tier III are based on de-inking facility achieving design production and Kraft mill process changes and/or improvements.
[3] Alternative Total Production is based on de-inking facility being discontinued.

Conventional Pollutants

- Best Conventional Pollutant Control Technology as denoted in 40 CFR 430 Subparts B and C for the bleached kraft market pulp and NSSC cross recovery pulp production, respectively.

- New Source Performance Standards (NSPS) as denoted in 40 CFR 430 Subpart B for the bleached kraft fine paper Biological Oxygen Demand (BOD) and Best Professional Judgement (BPJ) established by the Washington State Department of Ecology for the bleached kraft fine paper Total Suspended Solids (TSS).
- New Source Performance Standards (NSPS) as denoted in 40 CFR 430 Subpart I for the bleached market de-ink pulp.

EFFLUENT LIMITATIONS TABLE

Grade (Subcategory)	Basis	BOD_5 (lbs./Ton)* Monthly Average	Daily Max	TSS (lbs./Ton) Monthly Average	.Daily Max
No. 1 Paper Machine (B) Bleached Kraft Market Pulp	BCT	16.1	30.9	32.8	60.8
No. 2 Paper Machine (C) NSSC Corrugated Media (Cross recovery process)	BCT	8.0	16.0	12.5	25.0
No. 3 Paper Machine (B) Bleached Kraft Fine Paper	BPJ	6.2	11.4	17.5	35.1
De-ink Market Pulp (I)	NSPS	10.4	19.2	13.6	26.2

* machine dry ton at the paper machine reel.

Table I. PRODUCTION DERIVED LIMITS AT THE BASE RATE

BASE		**BOD**				
Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max (#/Ton)	Daily Max #/Day
Bleached MKT Pulp	392	BCT	16.1	6,311	30.9	12,113
NSSC Medium	366	BCT	8.0	2,928	16.0	5,856
Fine Paper	681	NSPS	6.2	4,222	11.4	7,763
De-Ink MKT Pulp	212	NSPS	10.4	2,205	19.2	4,070
Totals[(1)]	**1,651**			**15,666**		**29,802**
Alternate	1,439			13,461		25,732

Totals[2]

BASE			TSS			
Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max #/Ton	Daily Max #/Day
Bleached MKT Pulp	392	BCT	32.8	12,858	60.8	23,834
NSSC Medium	366	BCT	12.5	4,575	25.0	9,150
Fine Paper	681	BEJ	17.5	11,918	35.1	23,903
De-Ink MKT Pulp	212	NSPS	13.6	2,883	26.2	5,554
Totals[1]	**1,651**			**32,234**		**62,441**
Alternate Totals[2]	1,439			29,351		56,887

[1]Base rates were determined by the highest continuous production rate reported during the last permit cycle.
[2]The effluent limits for the base rate and each Tier will remain in effect for one year after Boise Cascade no longer treats the de-ink plant effluent due to its closure. If the de-ink plant is not restarted after one year from the closing date, the alternate totals as prescribed in the table shall be used.

Table II. PRODUCTION DERIVED LIMITS AT INCREASED RATES

TIER I			BOD			
Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max #/Ton	Daily Max #/Day
Bleached MKT Pulp	422	BCT	16.1	6,794	30.9	13,040
NSSC Medium	366	BCT	8.0	2,928	16.0	5,856
Fine Paper	681	NSPS	6.2	4,222	11.4	7,763
De-Ink MKT Pulp	212	NSPS	10.4	2,205	19.2	4,070
Totals[1]	**1,681**			**16,149**		**30,729**
Alternate Totals[2]	1,469			13,944		26,659

TIER I			TSS			

Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max #/Ton	Daily Max #/Day
Bleached MKT Pulp	422	BCT	32.8	13,842	60.8	25,658
NSSC Medium	366	BCT	12.5	4,575	25.0	9,150
Fine Paper	681	BEJ	17.5	11,918	35.1	23,903
De-Ink MKT Pulp	212	NSPS	13.6	2,883	26.2	5,554
Totals[(1)]	**1,681**			**33,218**		**64,265**
Alternate Totals[(2)]	1,469			30,335		58,711

[(1)] Tier 1 total is based on Permittee demonstrating sustained production increase for a period of three consecutive months.
[(2)]The effluent limits for the base rate and each Tier will remain in effect for one year after Boise Cascade no longer treats the de-ink plant effluent due to its closure. If the de-ink plant is not restarted after one year from the closing date, the alternate totals as prescribed in the table shall be used.

Table III. PRODUCTION DERIVED LIMITS AT INCREASED RATES

TIER II			**BOD**			
Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max (#/Ton)	Daily Max #/Day
Bleached MKT Pulp	452	BCT	16.1	7,277	30.9	13,967
NSSC Medium	366	BCT	8.0	2,928	16.0	5,856
Fine Paper	681	NSPS	6.2	4,222	11.4	7,763
De-Ink MKT Pulp	258	NSPS	10.4	2,683	19.2	4,954
Totals[(1)]	**1,757**			**17,110**		**32,540**
Alternate Totals[(2)]	1,499			14,427		27,586

TIER II			**TSS**			
Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max #/Ton	Daily Max #/Day
Bleached MKT	452	BCT	32.8	14,826	60.8	27,482

Pulp						
NSSC Medium	366	BCT	12.5	4,575	25.0	9,150
Fine Paper	681	BEJ	17.5	11,918	35.1	23,903
De-Ink MKT Pulp	258	NSPS	13.6	3,509	26.2	6,760
Totals[(1)]	**1,757**			**34,828**		**67,295**
Alternate Totals[(2)]	1,499			31,319		60,535

[(1)]Tier II total is based on Permittee demonstrating sustained production increase for a period of three consecutive months.
[(2)]The effluent limits for the base rate and each Tier will remain in effect for one year after Boise Cascade no longer treats the de-ink plant effluent due to its closure. If the de-ink plant is not restarted after one year from the closing date, the alternate totals as prescribed in the table shall be used.

Table IV. PRODUCTION DERIVED LIMITS AT INCREASED RATES

TIER III			**BOD**			
Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max (#/Ton)	Daily Max #/Day
Bleached MKT Pulp	482	BCT	16.1	7,760	30.9	14,894
NSCC Medium	366	BCT	8.0	2,928	16.0	5,856
Fine Paper	681	NSPS	6.2	4,222	11.4	7,763
De-Ink MKT Pulp	312	NSPS	10.4	3,245	19.2	5,990
Totals[(1)]	**1,841**			**18,155**		**34,503**
Alternate Totals[(2)]	1,529			14,910		28,513

TIER III			**TSS**			
Production Unit	ADT/Day (Off-mach)	Basis for Limit	Monthly Avg. (#/Ton)	Monthly Avg. #/Day	Daily Max (#/Ton)	Daily Max #/Day
Bleached MKT Pulp	482	BCT	32.8	15,810	60.8	29,306
NSCC Medium	366	BCT	12.5	4,575	25.0	9,150
Fine Paper	681	BEJ	17.5	11,918	35.1	23,903

De-Ink MKT Pulp	312	NSPS	13.6	4,243	26.2	8,174
Totals[1]	**1,841**			**36,546**		**70,533**
Alternate Totals[2]	1,529			32,303		62,359

[1]Tier III total is based on Permittee demonstrating sustained production increase for a period of three consecutive months.
[2]The effluent limits for the base rate and each Tier will remain in effect for one year after Boise Cascade no longer treats the de-ink plant effluent due to its closure. If the de-ink plant is not restarted after one year from the closing date, the alternate totals as prescribed in the table shall be used.

NON-CONVENTIONAL POLLUTANTS

EPA-established effluent limits for nonconventional pollutants, which will be effective after April 15, 2001, represented the degree of effluent reduction attainable by the application of best available technology (BAT) economically achievable from Bleached Papergrade Kraft and Soda subcategory 40 CFR Part 430.24. Mass effluent limits for adsorbable organic halides (AOX) and chloroform are based on unbleached pulp entering the bleach plant. This production basis differs from the conventional pollutant production, which is based on gross paper machine production at the off machine reel. The paper machine production takes into account processed recycled pulp, paper machine additives, bleach plant bleaching losses, machine paper moisture and Kraft digester pulp rejects, while the unbleached screened pulp production has no other constituents or process adjustments affecting its final production determination.

AOX is measured at the outfall. Chloroform is measured at the bleach plant. Mass limits for AOX and chloroform have been established in the permit using the tiered approach similar to the conventional pollutant. The mass limits for AOX and chloroform are based on production increase of unbleached pulp entering the bleach plant. Tables V through VIII define the production and limits for AOX and chloroform limits in the mill's effluent.

Table V. PRODUCTION DERIVED LIMITS FOR BLEACH PLANT DISCHARGES

BASE		**AOX**			
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)
Unbleached Pulp (Average Mo.)	1,010	1.246	1.902	1,258	1,921
BASE		**CHLOROFORM**			
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)

Unbleached Pulp (Average Mos.)	1,010	0.00828	0.01384	8.36	13.98

Notes:
(1) Based on BAT discharge factors for unbleached pulp to the bleach plant

Table VI. PRODUCTION DERIVED LIMITS FOR BLEACH PLANT DISCHARGES

Tier I	**AOX**				
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)
Unbleached Pulp (Average Mos.)	1,051	1.246	1.902	1,310	1,999

Tier I	**CHLOROFORM**				
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)
Unbleached Pulp (Average Mos.)	1,051	0.00828	0.01384	8.7	14.55

Notes:
(1) Based on BAT discharge factors for unbleached pulp to the bleach plant

Table VII. PRODUCTION DERIVED LIMITS FOR BLEACH PLANT DISCHARGES

Tier II	**AOX**				
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)
Unbleached Pulp (Average Mos.)	1,071	1.246	1.902	1,334	2,037

Tier II	**CHLOROFORM**				
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)

Unbleached Pulp (Average Mos.)	1,071	0.00828	0.01384	8.87	14.82

Notes:
(1) Based on BAT discharge factors for unbleached pulp to the bleach plant

Table VIII. PRODUCTION DERIVED LIMITS FOR BLEACH PLANT DISCHARGES

Tier III			**AOX**		
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)
Unbleached Pulp (Average Mos.)	1,100	1.246	1.902	1,371	2,092
BASE			**CHLOROFORM**		
Production Unit	ADT/Day (to bleach plant)	Monthly Avg. Factor (#/Ton)	Daily Max. Factor (#/Ton)	Monthly Avg. (#/Day)	Daily Max (#/Day)
Unbleached Pulp (Average Mos.)	1,100	0.00828	0.01384	9.11	15.22

Notes:
(1) Based on BAT discharge factors for unbleached pulp to the bleach plant

BLEACH PLANT EFFLUENT LIMITS

Bleach Plant Effluent Limits for the following organic chemicals are established by 40 CFR 430.24 at minimum levels:

Pollutant	Minimum Level
2,3,7,8-TCDD	10 pg/ℓ (1)
2,3,7,8-TCDF	31.9 pg/ℓ (1)
Trichlorosyringol	2.5 µg/ℓ (2)
3,4,5-Trichlorocatechol	5.0 µg/ℓ (2)
3,4,6-Trichlorocatechol	5.0 µg/ℓ (2)
3,4,5-Trichloroguaiacol	2.5 µg/ℓ (2)
3,4,6-Trichloroguaiacol	2.5 µg/ℓ (2)

4,5,6-Trichloroguaiacol	2.5 µg/ℓ [(2)]
2,4,5-Trichlorophenol	2.5 µg/ℓ[(2)]
2,4,6-Trichlorophenol	2.5 µg/ℓ[(2)]
Tetrachlorocatechol	5.0 µg/ℓ[(2)]
Tetrachloroguaiacol	5.0 µg/ℓ[(2)]
2,3,4,6-Tetrachlorophenol	2.5 µg/ℓ[(2)]
Pentachlorophenol	5.0 µg/ℓ[(2)]

Notes:

(1) picograms per liter.
(2) micrograms per liter.

Minimum level is defined by EPA as "The level at which the analytical system give recognizable signals and acceptable calibration points."

BEST MANAGEMENT PRACTICES

Best Management Practices (40 CFR 430.28) are required to prevent leaks and spills of spent pulping liquors, soap, and turpentine. The Permittee has established a program to accomplish this objective and is implementing the program.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTI-DEGRADATION

The State of Washington's Anti-degradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Anti-degradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the water body's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones are authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the Columbia River. The Columbia River is designated a Class A receiving water in the vicinity of the outfall. Characteristic water uses include fish and shellfish rearing and havesting, commerce and navigation, industrial water supply, and general recreation and aesthetic enjoyment. Compliance with the permit conditions should not result in degradation of water quality standards or impair any beneficial uses.

SURFACE WATER QUALITY CRITERIA (201A)

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliform	100 organisms/100 ml maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	20 degrees Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls that the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

The chronic mixing zone boundary extends 358 feet (109.2 m) downstream form the diffuser, 100 feet (30.5 m) upstream form the diffuser, and its cross-width extends to 50 feet (15.2 m) beyond each end of the diffuser. The acute mixing zone boundary extends 35.8 feet (10.9 m) in any direction from the diffuser. The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of the CORMIX 2 Plume Model (Cornell Mixing Zone Expert System, Subsystem CORMIX 2, Submerged Multi-port Discharges, Cornell University, Ithaca, NY, February 1992). The dilution factors have been determined to be:

	Acute	Chronic
Aquatic Life	43	306
Human Health, Carcinogen		306

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The critical condition for the Columbia River is the seven-day average low river flow with a recurrence interval of ten years (7Q10). Ambient data at critical conditions in the vicinity of the mill outfall was taken from the TMDL study which considered both historical data and an intensive monitoring study conducted in September-October 1990. The ambient background data used for this permit includes the following from Ogden Beeman & Associates, Inc, 'Dilution Ratio Study, Boise Cascade Secondary Effluent Outfall, Wallula Mill, December 20, 1991':

Parameter	Value used
7Q10 low flow	80,600 cubic feet per second
Ambient Velocity	0.15 ft/sec
Average Water Depth	45.3 feet
Depth at Discharge	58 feet
Width	3609.1 feet
Roughness (Manning)	n=0.030
Slope	< 1%
Temperature	20.6^{o} C
pH (high)	7.5
Dissolved Oxygen	8.0 mg/L

The impacts of dissolved oxygen deficiency, temperature, pH, fecal coliform, chlorine, ammonia, metals, and other toxics were determined as shown below, using the dilution factors at critical conditions described above.

BOD_5 --Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitation for BOD_5 was placed in the permit.

Temperature –

The Columbia River has been listed as an impaired water body along its entire length. However, most of the data used in the listing were obtained from sampling points located in the tributaries of the water body. There were three sampling locations used in the listing that were in the water body proper. These three locations are at the following coordinates:

Latitude: 45° 56' 06" N – Longitude: 119° 45' 05" W – T5N, R24E, Sec 1 WA
Latitude: 45° 42' 54" N – Longitude: 120° 41' 06" W – T3N, R17E, Sec 28 WA
Latitude: 47° 18' 43" N – Longitude: 120° 04' 45" W – T21N, R22E, Sec 16 WA

The Boise Cascade Wallula mill discharge point is located down stream from the

Latitude: 46° 06' 00" N – Longitude: 118° 55' 00" W – T7N, R31E, Sec 10 WA

Water Body I.D. is WA-CR-1025, Segment No. 26 WRIA 99. All of the listing data in WA-CR-1025 were taken in the tributaries of the Columbia River. With the tributaries being impaired, we are unable at this time with the limited data available to make the determination the Columbia River should be or should not be listed at the Boise Cascade Wallula discharge point. The 303(d) listing points are for individual Townships where the sampling points were. The location closest to the sampling points on the Columbia River has been determined to be different township from the Boise Cascade's discharge point. Ecology requires a study in the permit to determine if the Columbia River should be listed on the 303(d) list as an impaired water body with respect to temperature at the township at which the mill discharge is located.

Regardless of the study requirements, a model was used to predict the potential impact at the discharge in 1992. The temperature of the receiving water was modeled by using the CORMIX 2 plume model at the critical condition. The predicted resultant temperature change at the boundary of the chronic mixing zone is 0.06^{o}C. This is well within compliance with the allowable impact of 0.3^{o}C when natural ambient condition exceeds 20^{o}C in the Water Quality Standards regulation (Chapter 173-201A). Under critical conditions there is no predicted violation of the Water Quality Standards for surface waters. Therefore, no effluent limitation for temperature was placed in the proposed permit. However, continuous monitoring, recording, and reporting of the temperature are placed in the permit. Also, water temperature study conducted by the Permittee will provide additional necessary data for temperature evaluation.

pH -- Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitations for pH was placed in the permit. The Permittee will monitor on the final effluent pH. Any excursions below 4.1 or above 10.0 will be considered as violations. Continuous monitoring, recording, and reporting of the pH are placed in the permit. This condition was in the previous permit.

Toxic Pollutants --Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

As reported in the Permittee's application submitted for permit renewal, the following chemicals with water quality criteria was evaluated in the discharge above the detection limit: inorganic antimony, chromium, copper, mercury, and nickel. A reasonable potential analysis (See Appendix C) was conducted on these parameters to determine whether or not effluent limitations would be required in this permit.

The determination of the reasonable potential for inorganic antimony, cadmium, chromium, copper, mercury, and nickel to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 at the critical condition. The critical condition in this case occurs November 19, 1991 (US Geological Survey. The parameters used in the critical condition modeling are as follows: acute dilution factor 43:1, chronic dilution factor 306:1, receiving water temperature 20.6^{o}C, receiving water alkalinity 150 (as mg $CaCO_3$/L).

No valid ambient background data was available for inorganic antimony, chromium, copper, mercury, nickel, and silver. A determination of reasonable potential using zero for background resulted in no reasonable potential. The Permittee is required in section S.9 of the proposed permit to collect background concentrations near the point of discharge. This information may result in a permit modification or limits in the next renewal.

Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal. The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sublethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC_{50}, EC_{50}, IC_{25}, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* which is referenced in the permit. Any Permittee interested in receiving a copy of this publication may call the Ecology Publications Distribution Center 360-407-7472 for a copy. Ecology recommends that Permittee send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

An effluent characterization for acute and chronic toxicity was conducted during the previous permit term. In accordance with WAC 173-205-060, the Permittee must repeat this effluent characterization because the Permittee process changed with, the addition of de-inking facility which began operation in 1996, which could impact effluent toxicity. In accordance with WAC 173-205-060(1), the proposed permit requires another effluent characterization for toxicity.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) and the Department's Permit Writer's Manual (Ecology Publication 92-109, July 1994). The determination indicated that the discharge has no reasonable potential to cause a violation of applicable standards, thus an effluent limit is not warranted.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittee to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400). The Department has determined through a review of this monitoring that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

Wallula Mill Ground Water Study, January 1997 prepared by Barr Engineering Company and EGR & Associates, Inc. in response to Administrative Order DE 95-QWI049 to evaluate the impact of the mill's wastewater treatment lagoon on groundwater quality. The results of this study indicated that a monitoring well was installed next to the Boise Cascade wastewater treatment lagoon and screened at the water table to intercept constituents from the lagoon. Adsorbable organic halides (AOX) was not detected in samples form this well. The results the

analyses of samples from this well are comparable to the results from the analyses of samples from the Columbia River. The results from the analyses of samples from this well show no discernable effects of leakage from the mill's wastewater treatment lagoon. The concentrations of constituents in samples from the monitoring well were most like those in the Columbia River, rather than the mill's lagoon. Since the AOX was not detected from the analysis, mass discharged of BOD and TSS to the well is insignificant based on the influent flow to the treatment system. Therefore, there will be no limitations or monitoring requirements placed in the permit during this permit phase.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved. The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

MONITORING SCHEDULE AT EFFECTIVE DATE

All parameters listed in this section shall be monitored at effective date until the expiration of the permit.

Category	Parameter	Units	Sample Point (Point of Compliance)	Minimum Sampling Frequency	Sample Type
Waste-Water Effluent	Flow	MGD	Final Effluent	Daily	Continuous recording
Waste-Water Effluent	BOD_5	mg/l	Secondary Treatment Effluent	Daily	24-hour composite
Waste-Water Effluent	TSS	mg/l	Secondary Treatment Effluent	Daily	24-hour composite
Waste-Water Effluent	pH	Standard Units	Final Effluent		Continuous Recording
Waste-Water Effluent	Temperature	^0F	Final Effluent	Daily	Continuous Recording
	Kraft Pulp Production	ADT/Day	To the bleach plant	Daily	
	Paper Production	MDT/Day	At the reel	Daily	
Waste-water Effluent	AOX	µg/l	Secondary Treatment	Daily	24-hour composite

Category	Parameter	Units	Sample Point (Point of Compliance)	Minimum Sampling Frequency	Sample Type
			Effluent		
Waste-water Effluent	TCDD	pg/l	Bleach Plant Effluent	Monthly	24-hour composite
Waste-water Effluent	TCDF	pg/l	Bleach Plant Effluent	Monthly	24-hour composite
Waste-water Effluent	TCDD	pg/l	Secondary Treatment Effluent	Semi-annual	24-hour composite
Waste-water Effluent	TCDF	pg/l	Secondary Treatment Effluent	Semi-annual	24-hour composite
Waste-water Effluent	Chloroform	µg/l	Bleach Plant Effluent	Weekly	24-hour composite
Waste-water Effluent	Trichlorosyringol 3,4,5-trichlorolcatechol 3,4,6-trichlorolcatechol 3,4,5-trichlorolguaiacol 3,4,6-trichlorolguaiacol 4,5,6-trichlorolguaiacol 2,4,5-trichlorolphenol 3,4,6-trichlorolphenol Tetrachlorocatechol Tetrachloroguaiacol 2,3,4,6-tetrachlorophenol Pentachlorophenol	µg/l	Bleach Plant Effluent	Monthly	24-hour composite
Sludge	2,3,7,8-TCDD 2,3,7,8-TCDF	ng/Kg	Primary Sludge	Annually	Grab

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.* The laboratory at this facility is accredited for : BOD, TSS, and pH. The mill hires accredited laboratories to perform all other permit testing and data requirements.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S.3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste. This proposed permit requires, under authority of RCW 90.48.080, that the Permittee develop a solid waste plan to prevent solid waste from causing pollution of waters of the state. The plan must be submitted to the Department for approval.

WATER TEMPERATURE STUDY

Several points on the lower Columbia River have been listed on the 1998 Section 303(d) listing for temperature. There is no data on a continuous basis for temperature and only very little limited data on grabs sampling near the Permittee's discharge. The sampling points for temperature that listed in the 303(d) listing only involved sites that were far apart and not within the Permittee's chronic dilution zone boundary. As a result of the limited data, the proposed permit will require the Permittee to perform a receiving water (Columbia River) temperature study in the vicinity of the mill's outfall for two years during the critical ambient temperature period.

EFFLUENT MIXING STUDY

The Department has estimated the amount of mixing of the discharge within the authorized mixing zone to determine the potential for violations of the Water Quality Standards for Surface Waters (Chapter 173-201A WAC). The Permittee determined the mixing characteristics of the discharge in the previous permit. No further requirements for modeling will be required at this time.

OUTFALL EVALUATION

Proposed permit condition S.12 requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection within the fourth year and 6 months of

the permit's effective date. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers and to evaluate the extent of sediment accumulations in the vicinity of the outfall.

TREATMENT SYSTEM OPERATING PLAN

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). An operation and maintenance manual was submitted as required by state regulation in the previous permit. It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit. Special condition S.4 in the permit will require the Permittee to update its Treatment System Operating Plan within 6 months of the permit's effective date and any major modification to the treatment system. The Permittee will conduct a treatment system adequacy demonstration to ensure compliance with the terms and limitation of the permit after the Cluster Rule implementation has been completed.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the Permittee to control its production in order to maintain compliance with its permit. Condition G10 prohibits the reintroduction of removed substances back into the effluent. Condition G11 states that the Department will modify or revoke and reissue the permit to conform to more stringent toxic effluent standards or prohibitions. Condition G12 incorporates by reference all other requirements of 40 CFR 122.41 and 122.42. Condition G13 notifies the Permittee that additional monitoring requirements may be established by the Department. Condition G14 requires the payment of permit fees. Condition G15 describes the penalties for violating permit conditions.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on March 12, 2001 in Tri-City Herald Newspaper to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Department of Ecology
Industrial Section
300 Desmond Drive SW
P.O. Box 47600
Lacey, WA 98504-7600
Att: Teddy V. Le, P.E.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by writing to the address listed above.

This permit and fact sheet were written by Teddy Le.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect potable water, industrial water, and wastewater for pathogens harmful to human health.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's life span or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

EC_{50} (effective concentration, fifty percent) means the effluent concentration estimated to cause an adverse effect in fifty percent of the test organisms in a toxicity test involving a series of dilutions of effluent.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

IC_{50} (inhibition concentration, fifty percent) means the effluent concentration estimated to cause a fifty percent reduction in a biological function in a toxicity test involving a series of dilutions of effluent.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

LC_{50} (lethal concentration, fifty percent) means the effluent concentration estimated to cause death in fifty per-cent of the test organisms in a toxicity test involving a series of dilutions.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minimum Level (ML)—The level at which the analytical system given recognizable signal and acceptable calibration point.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

NOEC (NO OBSERVED EFFECT CONCENTRATION) - The highest measured continuous concentration of an effluent or a toxicant that causes no observed effect on a test organism. NOEC (NO OBSERVED EFFECT CONCENTRATION) - The highest measured continuous concentration of an effluent or a toxicant that causes no observed effect on a test organism.

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--RESPONSE TO COMMENTS

Dave Thomas and Norma Jean Sutton comment on permit reissuance

As members of the Pulp and Pulp and Paperworkers's Resource Council we are concerned about the future of Boise Cascade Wallula Paper Mill. We would like to see the Water Permit for the mill renewed. Approximately 700 family wage jobs directly depend upon the viability of this mill. The mill provides a stable economic base and indirect economic impact to businesses and residents with Walla Walla County and the greater Tri-Cities.

The Wallula Mill has continued to be proactive and responsive to environmental concerns. Additionally, Boise Cascade Wallula Mill is supportive in a variety of community activities by providing monetary support and a strong volunteer base for many non-profit organizations.

Response:

The Department has acknowledged of your concerns.

EPA comments on Special Condition S1.D (Columbia Temperature Study) of the draft Permit

1. Clarify the Columbia in the vicinity of these discharges is not currently included on the 303(d) list. This was not clearly identified in the fact sheet. Ecology might consider whether to flag the high likelihood that river temperature near these mills might exceed current state water quality criteria.

   Response:

   The Columbia River has been listed as an impaired water body along its entire length. However, most of the data used in the listing were obtained from sampling points located in the tributaries of the water body. There were three sampling locations used in the listing that were in the water body proper. These three locations are at the following coordinates:

   Latitude: 45° 56' 06" N – Longitude: 119° 45' 05" W – T5N, R24E, Sec 1 WA
   Latitude: 45° 42' 54" N – Longitude: 120° 41' 06" W – T3N, R17E, Sec 28 WA
   Latitude: 47° 18' 43" N – Longitude: 120° 04' 45" W – T21N, R22E, Sec 16 WA

   The Boise Cascade Wallula mill discharge point is located at the following coordinates:

   Latitude: 46° 06' 00" N – Longitude: 118° 55' 00" W – Water Body I.D. is WA-CR-1025, Segment No. 26 WRIA 99

   All of the listing data in WA-CR-1025 were taken in the tributaries of the Columbia River. With the tributaries being impaired, we are unable at this time with the limited data available to make the determination the Columbia River should be or should not be listed at the Boise Cascade Wallula discharge point. The 303(d) listing points are for individual Townships where the sampling points were. The location closest to the sampling points on the Columbia

River has been determined to be different township from the Boise Cascade's discharge point. Ecology requires a study in the permit to determine if the Columbia River should be listed on the 303(d) list as an impaired water body with respect to temperature at the township at which the mill discharge is located.

2. Include or reference expectations for quality assurance of the temperature monitoring study to be conducted. Providing the permittee more specific parameters for conducting these studies should help avoid an unnecessarily long, iterative process of developing and implementing a monitoring plan. A copy of a recent Quality Assurance Project Plan for the Little Klickitat River Temperature TMDL was provided your staff as an example.

   Response:

   A quality assurance plan has been included in the permit.

3. Require monitoring be conducted over a period of two years so the study encompasses two annual warm water periods. This will help address issues associated with annual variations.

   Response:

   The study is for two years.

4. Utilize the actual configuration of the individual mill's outfall in the model developed to predict immediate mixing of effluent in receiving waters. Monitoring data collected within these outfall plumes should be used to calibrate and verify model predictions. This element of the study is important because of concerns about lethality caused by potential entrainment of fish in the effluent plume.

   Response:

   Modeling of immediate mixing of the effluent with the receiving water has been added to the permit.

5. Establish an ambient monitoring station upstream of the effluence of each discharge. Monitoring should be collected along a transect of the river and at various river depths along that transect to evaluate whether stratification of water temperature is occurring. Monitoring data must be collected that is adequate to evaluate compliance with both the current and proposed state water quality standards. Although the exact form of the criteria is not yet certain, it is most likely that a 7-day average will eventually be part of the state's standards.

   Response:

   The requirement has been added. The permittee is advised that Ecology is in the process of modifying Water Quality Program Policy 1-11. The modified policy allow data to be considered from other sources if the data meet the Quality Assurance that is contained in the new policy. To ensure that the data can be considered in any decisions about the 303(d)

listing of the Columbia River, the new policy quality assurance should be followed. The new policy is expected to be published in its final form in June 2001.

6. Include a clearly written provision tat the permit may be reopened and modified before expiration if the completed study or TMDL determines that the water quality-based effluent limitations for temperature are necessary.

   Response:

   The requirement has been added. Ecology recognizes that the same statement is contained in G.3.(D) of the permit.

7. Measure and record ambient air temperature when discharge or receiving water monitoring is being conducted.

   Response:

   The requirement has been added.

Northwest Pulp and Paper Association comments on Temperature Study

The Northwest Pulp and Paper Association has offered alternative language that clarifies the basic objectives of the study.

1. As drafted in the reporting requirements: "In the final reports shall discuss whether the receiving water needs to be included in the State of Washington's Clean Water Act Section 303(d) list utilizing the assessment criteria established in the Water Quality Program Policy 1-11."

   Now it has been revised to read:

   "The final report shall discuss whether the receiving water needs to be included in the State of Washington's Clean Water Act Section 303(d) list utilizing the assessment criteria established in the Water Quality Program Policy 1-11."

2. As draft in the permit: "If the final report indicates that the receiving water temperature does not meet the applicable numeric surface water quality criteria outside the permitted mixing zone then the Department may issue a regulatory order directing the Permittee to prepare a feasibility study to investigate and evaluate all known, available and reasonable technologies to reduce the temperature of the Permittee's effluent during the receiving water's critical period."

   The suggested change was as follows: "If the final report indicates that the receiving water temperature does not meet the applicable numeric surface water quality criteria outside the permitted mixing zone then the Department may issue a regulatory order directing the Permittee to prepare a feasibility study to investigate and evaluate all known, available and

reasonable technologies to reduce the ***thermal loading*** of the Permittee's effluent during the receiving water's critical period."

Due to the numerous revisions in response to other parties' comments, now it has been revised to read:

"The Permittee shall also conduct an engineering study to evaluate availability and cost of technologies to reduce the temperature of the effluent during the critical period in the receiving water. This study shall meet the requirements of Chapter 173-240-130 WAC and applicable guidance provided in the Department of Ecology document entitled "State Requirements for Submission of Engineering Reports and Plans for Industrial Wastewater Treatment Facilities." The final engineering study on the evaluation of temperature reduction technology shall be submitted to the department before the fourth year of the permit term."